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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/566,544

01/27/2006

Makoto Goto

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EXAMINER

VILLECCO, JOHN M

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

10/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,544	Applicant(s) GOTO, MAKOTO	
	Examiner JOHN M. VILLECCO	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-7 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by**

Nishioka et al. (U.S. Publ. No. 2003/0184669).

3. Regarding *claim 1*, Nishioka discloses an optical apparatus provided with a variable mirror. More specifically and as it relates to the applicant's claims, Nishioka discloses a movable image pickup member (variable mirror, 409 and associated reflecting surface, 409a) which configures an image pickup section (solid-state image sensor, 408) for performing an

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image pickup of a subject, an actuator (piezoelectric element, 409c; see paragraph 0409) which deforms by being supplied with electric power to move the image pickup member (variable mirror, 409 and associated reflecting surface, 409a) and in which operating property (voltage) for the supply of the electric power are varied in response to use environmental conditions of the image pickup device (solid-state image sensor, 408) and a controlling section (variable mirror driving circuit, 310) for controlling an operation of the actuator (piezoelectric element, 409c); a storing section (LUT, 300) for storing stop position information in which an operation amount of the actuator (piezoelectric element, 409c) for moving the image pickup member (variable mirror, 409 and associated reflecting surface, 409a) to a predetermined stop position is defined based on the operating property (voltage) of the actuator (piezoelectric element, 409c), which corresponds to at least one of the use environmental conditions (temperature, humidity, etc) of the image pickup device (solid-state image sensor, 408); a use environmental condition specifying section (temperature sensor, 415 or humidity sensor, 416) for specifying the use environmental conditions of the image pickup device (solid-state image sensor, 408); an operation amount obtaining section (microcomputer, 311; see paragraph 0242) for obtaining the operation amount of the actuator from the stop position information stored in the storing section (LUT, 300) based on the operating property of the actuator, which corresponds to the use environmental conditions specified by the use environmental condition specifying section, wherein the controlling section (variable mirror driving circuit, 310) controls an operation of the actuator so that the actuator moves the image pickup member to the predetermined stop position in accordance with the operation amount of the actuator, which is obtained by the operation amount obtaining section

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(microcomputer, 311). See paragraphs 0237-0256, 0409, 0411-0412, and Figures 1, 3, 21, 24, 25.

4. As for *claim 2*, Nishioka discloses that the stop position information comprises temperature amount information (Figure 3) in which the operation amount of the actuator is defined based on the operating property (voltage of each electrode) of the actuator, which is varied in response to the use environmental conditions including temperature; the use environmental condition specifying section comprises a temperature detecting section (temperature sensor, 415) for detecting the temperature; the operation amount obtaining section (microcomputer, 311) obtains the operation amount of the actuator, which corresponds to the operating property of the actuator at the temperature detected by the temperature detecting section, from the temperature operation amount information of the stop position information. See paragraphs 0237-0257.

5. With regard to *claim 5*, Nishioka discloses that similarly to the temperature (as discussed above in claim 2), the humidity (measured by the humidity sensor, 416) can also be used as an environmental condition. See paragraph 0255.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. **Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Nishioka et al. (U.S. Publ. No. 2003/0184669) in view of Musashi et al. (Japanese Publ. No. 2002-228816 A).**

8. Regarding *claim 6*, as mentioned above in the discussion of claim 1, Nishioka discloses al of the limitations of the parent claim. Nishioka, however, fails to disclose that the storing section stores distance information relating to an image pickup distance from the image pickup section, a distance measuring section, a stop position specifying section for specifying the stop position from the distance information, and obtaining the operation amount of the actuator based on the distance. Musashi, on the other hand, discloses just such an arrangement. More specifically and as it relates to the applicant's claims, Musashi discloses a table stored in EEPROM (14) (Figure 8) that associates an acquired distance with a voltage driving value of an electrode for the deformable mirror. Furthermore, Musashi discloses a distance measuring section (Figure 5) for acquiring a distance to the subject. This distance is used to control the mirror of the image taking system. See paragraphs 0016 and 0017. Such an arrangement allows for a highly focused image based on the distance. Therefore, it would have been obvious to one of ordinary skill in the art to move the deformable mirror of Nishioka based on a distance acquired by a distance measuring section, as in Musashi, so that a highly focused image is acquired. An Official translation has been ordered for use in subsequent office actions.

9. **Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino (U.S. Patent No. 6,144,805) in view of Hagimori (U.S. Patent No. 6,646,816).**

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10. Regarding *claim 1*, Ogino discloses an optical apparatus for correcting focus detection caused by environmental variation. More specifically and as it relates to the applicant's claims, Ogino discloses a moveable image pickup member (variator lens, 102 and RR lens, 104) which configures an image pickup section (photoelectric conversion element, 18) for performing an image pickup of a subject, an actuator (driving means, 5 and 6; col. 4, lines 43-61) being supplied with electric power to move the image pickup member (variator lens, 102 and RR lens, 104) in response to use environmental conditions (temperature or humidity) of the image pickup device, and a controlling section (driving circuits, 15 and 17) for controlling an operation of the actuator, a storing section (ROM, 14) for storing stop position information in which an operation amount of the actuator for moving the image pickup member to a predetermined stop position is defined, which corresponds to at least one of the use environmental conditions of the image pickup device; a use environmental condition specifying section (termistor, 12) for specifying the use environmental conditions of the image pickup device; an operation amount obtaining section (control circuit, 13) for obtaining the operation amount of the actuator from the stop position information stored in the storing section based on the operating property of the actuator, which corresponds to the use environmental conditions specified by the use environmental conditions specifying section, wherein the controlling section controls an operation amount of the actuator so that the actuator moves the image pickup member to the predetermined stop position in accordance with the operation amount of the actuator, which is obtained by the operation amount obtaining section. See column 6, line 45 to column 10, line 34.\

Ogino, however, fails to specifically disclose that the actuator deforms by being supplied with electric power to move the image pickup member and in which operating property for the

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supply of electric power are varied in response to the use environmental conditions. Hagimori, on the other hand, discloses that it is well known in the art to move lens using actuators that deform. More specifically, Hagimori discloses the use of piezoelectric elements (41 and 45) to move the lenses (44 and 48) in response to the supply of electric power. See column 3, lines 41-48. One of ordinary skill in the art would recognize that piezoelectric actuators allow for the miniaturization of the lens system. Therefore, it would have been obvious to one of ordinary skill in the art to replace the driving motors of Ogino with the piezoelectric actuators of Hagimori so that the lens system may be miniaturized.

11. As for *claim* 7, as mentioned above in the discussion of claim 1, Ogino discloses a focusing lens (44) moved by actuator, 41, and a zooming lens (48), moved by actuator, 45. Furthermore, Hagimori discloses in Figure 7, that the zooming lens moves more than the focusing lens. Therefore, the Examiner is interpreting the actuator, 41, to be the claimed first actuator which operates with high precision and the actuator, 45, to be the claimed second actuator configured to have an operating range wider than the first actuator.

Allowable Subject Matter

12. Claims 3 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 3, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest that the stop position information comprises attitude operation amount information.

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As for claim 4, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest that the stop position information comprises direction operation amount information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN M. VILLECCO whose telephone number is (571)272-7319. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHN M. VILLECCO/
Primary Examiner, Art Unit 2622
October 29, 2008